



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,652	07/07/2005	Reinhard Meier	DE03 0011 US	3864
65913	7590	12/15/2008	EXAMINER	
NXP, B.V.			VANCHY JR, MICHAEL J	
NXP INTELLECTUAL PROPERTY DEPARTMENT			ART UNIT	PAPER NUMBER
M/S41-SJ				2624
1109 MCKAY DRIVE				
SAN JOSE, CA 95131				
		NOTIFICATION DATE	DELIVERY MODE	
		12/15/2008	ELECTRONIC	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No. 10/541,652	Applicant(s) MEIER, REINHARD
	Examiner MICHAEL VANCHY JR	Art Unit 2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 29 September 2008.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 16 and 17 is/are allowed.
- 6) Claim(s) 1-5 is/are rejected.
- 7) Claim(s) 6,7 and 11 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-146/08)
 Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____
- 5) Notice of Informal Patent Application
 6) Other: _____

DETAILED ACTION

1. The Request for Continued Examination was received on September 29, 2008.
2. The "provisional" type double patenting is still applicable and can be found in the previous office action.
3. Claims 1-4 have been amended.
4. Response to the arguments made by the Applicant can be found within the following office action.

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
6. **Claims 1-5, 9, 10, 12, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reisman et al., 7,142,699 B2.**

Re claim 1, a method of binarizing images containing linear structures, and particularly images of prints from the skin (Reisman et al., col. 6, lines, 25-26 and 31-33), characterized in that areas of an image are determined that are each distinguished by a preset approximate direction of the structures using a first set of Gabor filters (col. 5, line 47 to col. 6, line 39) and in that the areas of the image that are determined are

each filtered exclusively with a single Gabor filter adapted to the given direction,
wherein the single Gabor filter is selected from a second set of Gabor filters (Reisman et al., col. 6, lines 40-52).

The examiner takes into account that based on the broadest interpretation of the claim language that the prior art of record reads on the limitations. Reisman uses a first set of Gabor filters, "bank of Gabor filters," for segmentation and enhancement. Then a second group of Gabor filters is used for filtering for a given direction.

Re claim 2, a method as claimed in claim 1, characterized in that the determination of the areas takes place, tile by tile of the tiles into which the image is divided, with the first set of Gabor filters of corresponding directions (col. 5, line 47 to col. 6, line 39).

Re claim 3, a method as claimed in claim 2, characterized in that the first set of Gabor filters includes four further Gabor filters (col. 5, line 47 to col. 6, line 39). Although Reisman et al. states using "a bank of Gabor filters," four Gabor filters can easily be used for increased speed computation.

Re claim 4, a method as claimed in claim 3, characterized in that the directions of the first set of Gabor filters further Gabor filters are determined by angles of 22.5.degree., 67.5.degree., 112.5.degree. and 157.5.degree. to an edge of the image (col. 5, line 47 to col. 6, line 39).

Although Reisman et al. states using "a bank of Gabor filters," four Gabor filters can easily be used for increased speed computation. The four filters that would be used in this case and are stated in Reisman would be at directions 22.5.degree, 67.5.degree, 112.5.degree, and 157.5.degree (Reisman et al., col. 7, lines 1-3 and lines 16-18).

Re claim 5, a method as claimed in claim 2, characterized in that, for the determination of the areas from the filter responses tile by tile of the tiles into which the image is divided, a variance is derived in each case from the given filter response and in that tiles having a variance that is greater than a preset threshold value are assigned to the given area (Reisman et al., col. 7, line 64 to col. 8, line 10).

Re claim 9, a method as claimed in claim 1, characterized in that the surface area of the areas so far determined is established and in that areas whose surface area is of less than a preset size are suppressed (Reisman et al., col. 6, lines, 9-39).

Re claim 10, a method as claimed in claim 9, characterized in that the surface area is established by tracing the outlines of the areas by means of an edge-tracing algorithm (Reisman et al., col. 6, lines 37-38).

Re claim 12, a method as claimed in claim 1, characterized in that the image is binarized prior to the filtering with Gabor filters adapted to direction (Reisman et al., col. 6, lines, 25-26 and 31-33).

Re claim 13, a method as claimed in claim 12, characterized in that, to allow the image to be binarized, a threshold value is derived from a histogram of the image covering those pixels in which there is clear information on direction (Reisman et al. col. 6, lines 9-24), and in that the threshold value is selected in such a way that half of the pixels are lighter than the threshold value and half are darker (Reisman et al., col. 6, lines, 31 -33).

Re claim 15, system (Reisman et al., col. 1, lines 16-18) for binarizing images containing linear structures, and particularly images of prints from the skin, using a method according to claim 1 (Reisman et al., col. 6, lines, 25-26 and 31-33).

1. **Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reisman et al., 7,142,699 B2 as applied to claim 1 above, and further in view of Ort et al., 5,926,555.**

Reisman el al. and Ort et al., both describe a fingerprint enhancement and identification system, however, Reisman et al. is silent on using smoothing filters for enhancement. Although, Ort et al. does use smoothing filters:

Re claim 8, a method as claimed in claim 1, characterized in that the pixels are adapted to the environment, as predominant at the time, of the given pixel by smoothing filters (Ort et al., col. 16, lines 57-63).

Therefor taking the combined teachings of Reisman et al. and Ort et al. as a whole, it is clear to one with ordinary skill in the art to use smoothing filters in finger enhancement and to modify Reisman et al. to include such filters.

Claim 14 is rejected under Reisman et al., however, Reisman et al. is silent on "further binarization" the examiner takes official notice that this method is notoriously well known and expected in the art and therefore would have been obvious to incorporate.

Allowable Subject Matter

2. Claims 6, 7, and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

3. Claims 16 and 17 are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Vanchy Jr. whose telephone number is (571) 270-1193. The examiner can normally be reached on Monday - Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed can be reached on (571) 272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael J. Vanchy Jr.
Examiner
AU 2624
(571) 270-1193

/Samir A. Ahmed/

Supervisory Patent Examiner, Art Unit 2624